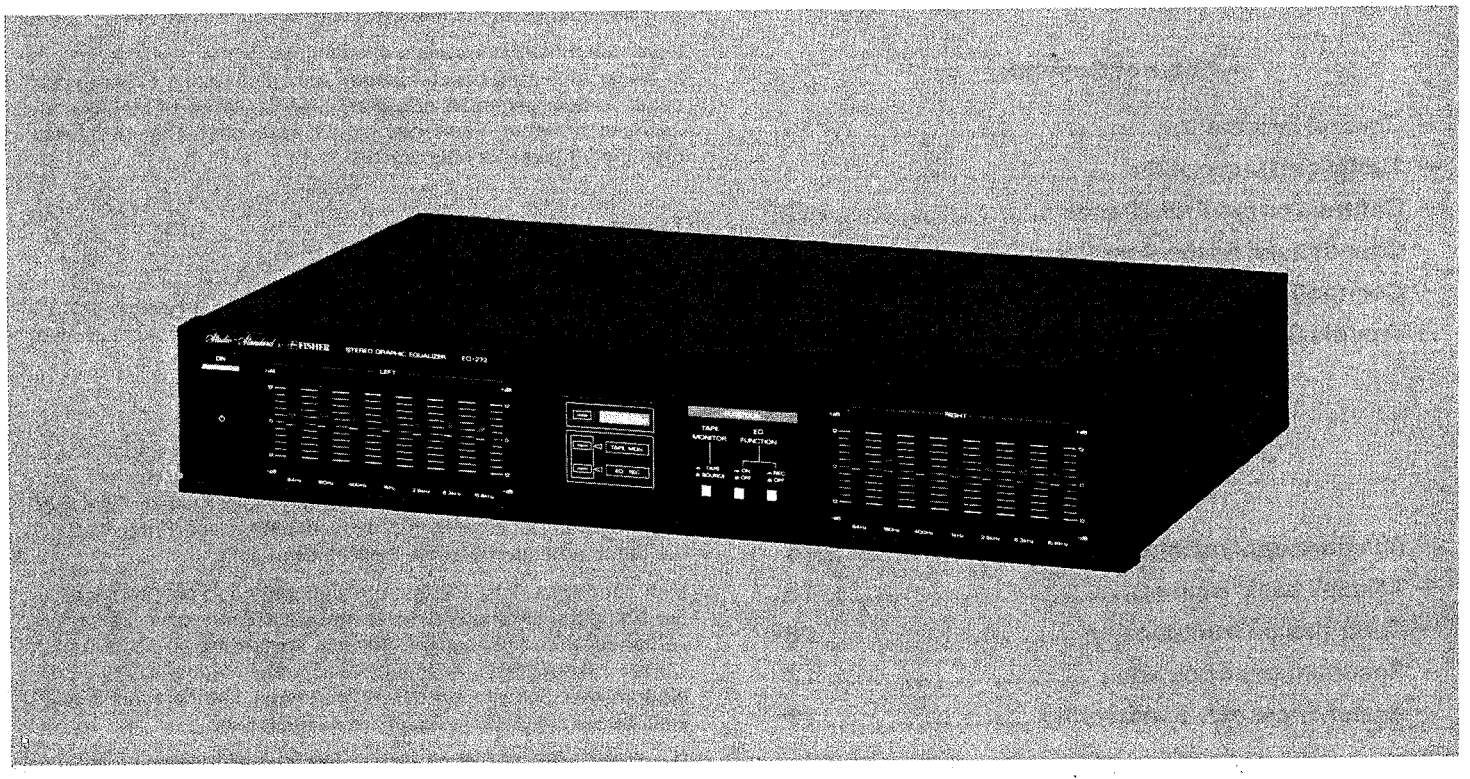
FISHER

Bedienungsanleitung	**Graphic Equalizer 2 x 7-Band-Universal-Entzerrer EQ-272**
Mode d'emploi	**Equaliseur graphique EQ-272**
Operating Instructions	**Graphic Equalizer EQ-272**
Bruksanvisning	**Grafisk equalizer EQ-272**

Studio-Standard



EQ-272

General Information

This manual is designed to provide all necessary information and instructions for successful operation of your FISHER Graphic Equalizer. If you are installing the unit yourself, please pay careful attention to the section on connecting the Graphic Equalizer to other units in your sound system. Complete information is given on the following pages.

This unit has been adjusted for operation on 220 volts, 50 Hz, AC. If the voltage in your area is different to this voltage, please pay careful attention to point number 3 of this manual: "Connections on the Rear Panel."

Your FISHER Graphic Equalizer is designed to be insensitive to temperature and voltage changes under normal conditions. For longer service life and operating safety, the unit should **not** be placed near sources of extreme heat (close to heating units or radiators), direct sunlight or areas of high humidity or moisture. Voltage fluctuations greater than ±10% can lead to mechanical failure of the unit. If you have questions on these points, please ask your dealer for further information.

To set up your Graphic Equalizer for operation, a series of connections to the usual components such as preamplifier, power amplifier, cassette recorder, must be made, in accordance with the chosen connection method. The last connection which should be made in the series is with the mains.

Follow the connection and operation instructions carefully in a step-by-step manner and within a short time, you will have gained all knowledge needed for successful operation of your FISHER Graphic Equalizer.

Before you switch on your unit for the first time, please check that all connections and installation requirements have been completed. The volume control on the connected amplifier should be set to the minimum position.

Technical Description

General

The FISHER Graphic Equalizer EQ-272 is designed for the combination with the FISHER System 274W.

Use of a Graphic Equalizer

The term "Graphic Equalizer" has established itself in semi-professional audio engineering. It is a preamplifier component which exclusively influences the frequency response of the traversing signals.

Such units bring about considerable changes in sound quality and correct any colourations (linear distortions). Even acoustic deficiencies in reproduction and short-comings of the loudspeakers in use can be compensated by the Graphic Equalizer.

The FISHER EQ-272 is constructed in such a way that it can be used in different ways with other units from the FISHER-series. The overall gain of the EQ-272 is zero i.e. input and output voltage is the same when the tone controls are in the middle position. Input and output voltage and impedances are chosen in such a way that the unit can easily be combined with most Hi-Fi components of other manufacturers on the market. The precondition is tape recorder connections which conform to the international norm (Cinch, RCA).

Combining with other Hi-Fi components

The connection method of the EQ-272 depends on the qualities of the connected amplifier and the functions which the Equalizer is meant to take over.

The possibilities are: –

1. Connecting the EQ-272 between the preamplifier and the power amplifier.

   a) With separate units (preamplifier and power amplifier): the sound signal from the preamplifier reaches the Equalizer and is ready at the LINE OUT cables for connection with the power amplifier.

   b) With integrated pre-/power amplifiers with separable connection between the pre- and power amplifier (e.g. FISHER CA-275 or CA-276): pull out the link plug at the back of the amplifier, connection as under point 1a. (Fig. 1)

   The connection method described here is useful if the Equalizer EQ-272 is only meant to influence the reproduction frequency response, room acoustics, and loudspeaker qualities.

   Advantages of this connection method:
   Easy to understand, to connect and to use; all possibilities of tape recorder reproduction and copying with tape monitoring are retained.

   Disadvantages of this connection method:
   Due to lack of connecting jacks not practicable with all units. Equalization of tape recordings is not possible.

2. Connection of the EQ-272 to the tape recording and reproduction jacks of the tape recorder. (Set the tape monitor on the amplifier to TAPE or PLAY.)

   The sound signal from the jacks TAPE REC reaches the Equalizer via the cables LINE IN, traverses the Equalizer and arrives at the cables LINE OUT ready to be fed into the jacks TAPE PB of the amplifier. Cassette recorders and tape recorders can be connected to the jacks TAPE of the Equalizer. (Fig. 2)

   Advantages of this connection method:
   Tape recordings (including tape monitoring) can be made with or without equalizer.

   Disadvantages of this connection method:
   Due to a complex signal path, misuse of the system is possible. Tape recordings are sometimes produced incorrectly without linear frequency response, and overloading of the cassette recorder during recording is possible. The possibility of tape copying is limited according to the circuit and connection technique of the amplifier.

By-Pass (Only connection method 2:)

Independent of the condition of the Equalizer and the current position of the 14 slide potentiometers, the Equalizer can be electrically totally by-passed and thereby switched over to strictly linear frequency and phase-linear characteristics.

Controls on the Front Panel (Fig. 3)

1. Operation Switch (ON)
   This switch is set to ON when depressed, the OPERATION indicator will light and the power is supplied. When the switch is released, the power is switched off.

   CAUTION:
   The operation switch of this unit is connected in the secondary circuit and does not disconnect the unit from AC power even if the switch is in ⏻ position, as long as the AC cord is connected to the AC line.

2. OPERATION Indicator
   Lights when the Operation switch is depressed.

3. EQ. ON/OFF Switch
   Depress this switch to ON to bring the graphic equalizer controls into operation.
   In the OFF position, the graphic equalizer controls are ineffective (irrespective of which position it happens to be in). The tone signal traverses the equalizer unaffected.

4. EQ. REC/OFF Switch
   (only effective if the Equalizer is operated by connection method 2, see "technical description")
   Tape recordings with frequency response influenced by the equalizer.
   When this switch is depressed to REC, the EQ. REC indicator will light.

5. EQ. REC Indicator
   Lights when the EQ. REC/OFF switch is set to REC.

6. Graphic Equalizer Controls
   For each the left and right channel of the 7 slide potentiometers enables a particular small area of the sound spectrum to be very effectively boosted or cut (up to ±12 dB). This results in a power increase by approximately 16 times or a power decrease of 1/16.

   CAUTION: When the slide potentiometer for the higher frequency range is in maximum position (+12 dB), care should be taken when using the tone controls on the Hi-Fi amplifier (BASS, TREBLE). The effect of the tone controls can increase to such an extent as to cause damage to the power transistors (high frequency oscillation) and loudspeakers (thermal overloading of the tweeter, mechanical overloading of woofer).

   In the middle position of the slide potentiometer, the reproduction is "linear," i.e. the influence of the Equalizer is negligible or non-existant.

7. TAPE MONITOR Switch
   Reproduction of tape recording with connection method 2.

   When this switch is depressed, the tape recording can be monitored. (Tape recorders and cassette recorders with separate recording and playback heads only.)

   When this switch is depressed to TAPE, the TAPE MONITOR indicator will light.

   NOTE:
   With the TAPE MONITOR switch depressed to listen to a tape from a tape recorder that is connected to the Equalizer, if the EQ. REC/OFF switch is depressed to REC, the sound is heard without equalization.

8. TAPE MONITOR Indicator
   Lights when the TAPE MONITOR switch is depressed.

Slide Control	Boost (up to +12 dB)	Cut (up to −12 dB)
64 Hz	To enhance deep bass tones and compensate acoustic deficiencies.	Suppression of low pitched-frequency disturbances (rumbles, acoustical feedback).
160 Hz	Adds "warmth" to music, punch to percussion instruments and makes weak voices and bad recordings richer.	Brightens up a dull sound impression and counteracts a muffled sound.
400 Hz	Enhances wind brass instruments.	Makes harsh sounds more pleasant.
1 kHz	Vocals are enhanced.	Corrects nasal sounds and moves sound farther away from listener in the acoustic image.
2.5 kHz	Adds "bite" to horns lead guitars etc. Increases clarity and intelligibility. Adds impact to percussion.	Reduces "screechiness." Corrects schrill vocals. Allows louder listening levels without discomfort.
6.3 kHz	Brings out overtones of grand piano, organ and violin.	Reduces excessive brightness of instrumental sounds.
15.6 kHz	Increases realism by bringing out extremely high instrumental overtones. Corrects frequency response of many loudspeakers.	Helps salvage noisy recordings. Corrects overbright instrumental sounds and "peaked" high end of some phono cartridges. De-emphasizes vocal sibilance.

Connections on the Rear Panel (Fig. 4)

1. LINE Cables
   The item "technical description" of this manual provides information on the various connection possibilities.

   Connection method 1a and 1b
   Connect the pair of LINE IN cables with the OUTPUT jacks of the preamplifier. Connect the pair of LINE OUT cables with the INPUT jacks of the power amplifier.

   Connection method 2
   Connect the pair of LINE IN cables to the tape recorder output (TAPE REC) of the amplifier or receiver. Connect the pair of LINE OUT cables with the tape recorder's playback input (TAPE PB) of the amplifier or receiver.

2. TAPE Deck Connections
   (only for connection method 2)
   Connect the tape recorder or cassette recorder for recording (REC) and playback (PB) with these connection jacks.

3. AC SELECTOR Switch
   This unit has been factory-adjusted for operation on 220VAC. The voltage can be changed for operation on 110VAC by making the following changes to the AC selector:

   - Remove the AC plug from the wall outlet.
   - Remove the screw holding the switch safety plate.
   - Switch the AC selector to 110V.
   - Replace the screw **without** the safety plate and tighten it.
   - Remove the second screw, place the safety plate on it and replace it, tightening it fully.

   DO NOT remove both screws at the same time!

   The unit is now ready for 110V operation. DO NOT attempt to operate the unit on 220V with the AC selector switch in the 110V position. Damage will result!

4. AC (Power Cable)
   After completing installation and all connections, place the plug in a wall outlet with the proper AC voltage.

Connections and Operating Information

Selection of the proper connection method

Please refer to the item "technical description" of this manual for information on which of the three possible connection methods would be best for you.

Basic adjustments to Equalizer

Before operating the Equalizer for the first time, we recommend that it be adjusted as follows:

- Volume control of the amplifier connected to the Equalizer turned fully to the left (0 position).
- EQ. ON/OFF switch in the OFF position.
- EQ. REC/OFF switch in the OFF position.
- TAPE MONITOR switch in the SOURCE position.
- All 14 slide controls in the middle position.
- Operation switch in the ON position.

If you want to adjust the sound impression to the room acoustics

- EQ. ON/OFF switch in the ON position.
- Turn volume control on the amplifier up slightly.
- Adjust the position of the 14 slide controls according to personal taste and environment.

If you want to correct sound deficiencies of the loudspeakers

Follow the instructions of the previous paragraph. Do not forget, however, that small loudspeakers can be overloaded by high amplifier power and powerful bass boosting. The same applies to strong treble boosting with a high listening volume.

If you want to correct deficiencies of a reproduction

- EQ. ON/OFF switch in the ON position.
- Try to perceive the sound deficiencies (rustling, rumbling, lack of treble, lack of bass etc).
- Try out the effect of various slide controls on the sound impression. You can gain useful knowledge by trial and error.
- The EQ. ON/OFF switch proves its value when one directly compares the quality of sound impression of a corrected reproduction and the original.

If you want to make cassette or tape recordings

a) Without Equalizer: use the recording unit as usual

b) With Equalizer: (only possible if you have chosen connection method 2. See "technical description.")

   - Depress the EQ. REC/OFF switch to REC. The EQ. REC indicator will light.
   - Use the recording unit as normal.
   - If you have a unit with 3 heads: you can listen to the recording with the TAPE MONITOR switch in the TAPE position.

CAUTION: With some tape recorders and cassette units, the record level indicator is technically not in a position to give an accurate record level indication with recordings over the equalizer. If distortions can be heard with stronger frequency response corrections of the program being recorded, the recording has been made at too high a level.

If you want to play cassette or tape recordings

a) Connection method 1a and 1b: use the tape or cassette recorder as usual

b) Connection method 2:

   - Depress the TAPE MONITOR switch. The TAPE MONITOR indicator will light.
   - Use the tape or cassette recorder as normal.

Trouble Shooting Guide

Should the equalizer not work at all or insufficiently, check the three following points. Then look for the symptom and corrective action in the following table:

1. Are all connecting cables properly installed?
2. Are the other components of the unit in perfect working order?
3. Have the instructions in this manual been followed when using the Equalizer?

SYMPTOM	CORRECTIVE ACTION
OPERATION indicator does not light.	Check AC Power connection. Defective fuse, replace fuse.
OPERATION indicator lights but no sound.	Put TAPE MONITOR switch in correct position. Put Function button on the amplifier in correct position. Turn up volume of connected amplifier by approx. 1/3. Check all cables and connections.
Only one channel produces sound.	Adjust BALANCE control on the amplifier to middle position. Check loudspeaker fuses (if fitted). Check connections of attached machines.
Exchanged channels (left and right).	Reversed cables on either speakers or other units. Check cable connections.